REMARKS

On pages 2-3 of the Office Action, the Examiner has issued a Restriction Requirement under 35 U.S.C. § 1.121 to one of the inventions of the following groups:

Group I - Claims 1-12, 35-38, 40-41, 43, 45-46, 48-50 and 66-68, drawn to a nucleotide encoding a legless protein;

Group II - Claims 13-16, 20-21, 23-24, 44 or 63, drawn to a legless polypeptide;

Group III - Claims 17, 61 and 69, drawn to a method for isolating a legless binding protein;

Group IV - Claims 18, drawn to a process of making a legless protein;

Group V - Claims 19 and 62, drawn to an antibody targeted to a legless protein;

Group VI - Claims 25-29, drawn to a compound that interferes with the binding of partner proteins with a legless protein;

Group VII - Claim 30, drawn to a synthetic molecule that stimulates a legless protein;

Group VIII - Claims 32 and 64-65, drawn to a legless antagonist;

Group IX - Claim 33, drawn to a method of screening for antagonists of legless;

Group X - Claims 39, 51 and 53-59, drawn to a method of treatment for a wnt related disease; and

Group XI - Claim 70, drawn to a method of diagnosing a cell fate disorder.

Accordingly, Applicants hereby elect the invention of Group II, i.e., Claims 13-16, 20-21, 23-24, 44 and 63, with traverse with respect to the inventions of Groups III and V-IX, and hereby cancel the non-elected claims without prejudice to pursing the same in a Divisional Application(s).

Specifically, the election of Group II (together with Groups III, V, VI, VII, VIII and IX) is made with traverse, because the Legless polypeptide is the common aspect of said groups. Group II is directly concerned with the isolation and identification of dLgs and hLgs protein (Claims 13-16), the creation of a chimeric protein thereof (Claims 20-21 and 63), the identification of homology domains of *Drosophila* and human Legless proteins (Claims 23-24) and a pharmaceutical composition comprising the identified Legless polypeptide (Claim 44).

The claims of Groups II, III, V, VI and VII are directly related to one or more aspects claimed in Group II. The creation of an antibody targeted against the human and/or *Drosophila* Legless protein as claimed in Claims 19 and 62 of Group V is only possible when the antigen, Lgs, was identified as claimed in Claims 13-16. The isolation of Lgs binding proteins as claimed in Group III can only be carried out using Lgs polypeptides or antibodies recognizing Lgs.

The identification of compounds interfering with the binding of partner proteins with legless protein as claimed in Group VI can only be carried out with a protein as claimed in Claims 13-16, 20-21 and 23-24 of Group II. For example, the

epitope tag sequence as claimed in Claim 21 of Group II is used in Example XII, at pages 42-43, which describes the screening for small molecules inhibiting Lgs-β-Cat or Lgs-Doll. On page 43, lines 1-5, a homologous time-resolved fluorescence (RTF) assay is described, which employs a histidine-tagged (His-tag) hLgs fragment.

The common basis of all of the claims of Groups VII, VIII and IX and Claim 32 are small biorganic molecules, synthetic polymers, or small polypeptides which either comprise the function of an agonist or an antagonist of Lgs protein or simulate the function of a Legless protein. Without the knowledge of the amino acid sequences and the identification of the function of the hLgs and dLgs proteins the identification of small biorganic molecules interfering with the binding of partner proteins with the functional domains of Lgs would not be possible. The method of screening for an antagonists or agonists as claimed in Claim 33 of Group IX is described in Example XII: Screening for small molecules inhibiting Lgs-β-Cat or Lgs-Doll. In order to make the mentioned biorganic molecules available, the development of a screening method adapted to the needs of the present invention is an absolute necessity.

Thus, the Examiner is requested to withdraw, at least in part, the Restriction Requirement.

Further, Applicants hereby cancel non-elected Claims 1-12, 18, 35-43, 45-59 and 64-68, without prejudice to the filing of a Divisional Application(s) thereon.

On pages 21-22 of the Office Action, the Examiner further issues an Election of Species Requirement with respect to the specific polypeptide sequences claimed.

Specifically, the Examiner states that if Applicants elect the invention of Groups II, III or V-IX, they must elect a single polypeptide among those encoded by SEQ ID NOs:1 or 16, or a homology domain of SEQ ID NOs:2, 3, 4 or 5.

Accordingly, Applicants hereby elect the sequence of SEQ ID NO:15, i.e., the hLgs/Bc19-protein, with traverse.

Specifically, the main object of the present invention is the identification of new positive acting components of the vertebrate Wg signaling pathway using *Drosophila* genetics. As described on page 21 of the specification, last paragraph, vertebrate homologues of all components of the *Drosophila* wg signaling pathway known to date have been identified, suggesting that novel identified members of the *Drosophila* signaling pathway, such as dlgs, may have vertebrate counterparts. Using a modification of standard search parameters, several stretches of amino acids within the dLgs protein were found to be highly homologous to a human protein, known as Bc19 (page 23, second paragraph). Comparison of Bc19, now named hLgs/Bc19, with dLgs revealed similar structural features, such as length, hydrophility and presence of a predicted coiled region. It is the major accomplishment and the main object of the present invention to show that hLgs/Bc19 is a functional human homologue of dLgs and lgs homologues. Therefore, it is apparent to any person skilled in the art who has understood the present invention, that the sequences of dLgs and hLgs/Bc19 can not be separated and

prosecuted in different applications, since they are part of the same invention wherein the identification of *Drosophila* lgs was the prerequisite for the identification and functional characterization of the human counterparts, i.e., human Lgs/Bc19.

The Examiner is invited to contact the undersigned at his Washington telephone number on any questions which might arise.

Respectfully submitted,

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A P P E N D I X

Marked-Up Version of Changes

IN THE CLAIMS:

Claims 1-12, 18, 35-43, 45-59 and 64-68 are being cancelled.

Claim 13 is being amended as follows:

Claim 13. (Amended) An isolated polypeptide encoded by [the] an isolated nucleotide molecule [of claim 1] coding for a protein present in invertebrate and/or vertebrate organisms, wherein said protein has a positive function in the Wnt/Wg-pathway, and wherein said protein comprises a legless (lgs) gene product, derivatives, fragments and analogs thereof.